PROJECT

ISSELUB

Innovative sealing and sensing technologies for extended life of lubricated elements.

Funding: European (Horizon 2020)

Duration: Jan 2016 - Dec 2018

Status: Complete

Total project cost: €681,188

EU contribution: €681,188

Call for proposal: H2020-CS2-CFP01-2014-01

CORDIS RCN : 199581

Objectives:

The overall goal of the project is focused on incrementing the efficiency of Electro-Mechanical and Electro-Hydrostatic systems in terms of extending the life and improving the reliability and enhancing the performance of the maintenance activities of wing actuation systems. With this objective in mind, the activities within the project have been oriented to the following goals:

- To investigate innovative and alternative sealing solutions that able to reduce the friction, wear and leakage at high level of deformation monitored in accelerated seal tests and can increase lifetime to thermal cycles.
- To investigate innovative and alternative lubricant solutions that are able to reduce friction and wear and to increase extreme pressure properties, increasing the temperature limit and time to a fixed temperature in Differential Scanning Calorimetry and Thermogravimetric measurements, in relation to reference lubricants.
- To provide new oil sensing systems to monitor the status of the lubricant with a twofold aim: identify faulty conditions and extend the life of the lubricant.
- To control the lifetime of the gears materials and lubricants by means of accelerated simulated tests reproducing the micro pitting/pitting lifetime and confirming for best materials/lubricants combination, using real gear testing benches, reproducing the generation of main failure mechanisms monitoring in parallel both vibrations and wear using oil sensors, in order to create the right knowledge for conditions monitoring.
- To develop, implement and integrate Health Monitoring algorithms to predict failures before affecting the actuator output in a critical way, addressing some mechanical parts of the actuation systems such as seals, gearbox, screwballs, etc.

The project has clear objectives to mature technologies to extend the life of EMAs and EHA: In this scenario, ISSELUB aims to address the challenge of extending the life of EMAs and EHA.

Parent Programmes:

H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Fundacion Tekniker

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EU Contribution: €681,188

Technologies:

Aircraft design and manufacturing
Electro-Mechanical Actuators (EMAs)

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other